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SCIENCE

FRIDAY, JANUARY 30, 1914.

THE DOCTOR'S DREAM¹

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DR. SMITH is a practitioner in one of the large cities of the middle West. He is a man of good training, a classical graduate, took his professional course in one of our best schools, and did hospital service both at home and abroad. He is a general practitioner and keeps well posted in all that he does. He makes no claim to universal knowledge or skill, but is conscientious in all his work, and when he meets with a case needing the service of a specialist he does not hesitate to call in the best help. He has made a good living, demands fair fees from those who are able to pay, and gives much gratuitous service to the poor. He is beloved by his patients, held in high esteem by his confreres, and respected by all who know him. He is a keen observer, reads character for the most part correctly, and is not easily imposed upon. While he recognizes the value of his services, he is not in the practise of medicine with the expectation of getting rich, and his interests are largely humane and scientific. He has deep sympathy for those whose ignorance leads them to sin against their own bodies, but he is devoid of weak sentimentality and does not hesitate to admonish and even denounce the misdeeds of his patients whatever their social position. During twenty years of practise in the same locality he has become acquainted with the vices and virtues of many families. He is not looking for the coming of the millenium, but he is often impatient of the slow pace with which the race moves

MSS. intended for publication and books, etc., intended for review should be sent to Professor J. McKeen Cattell, Garrison-on-Hudson, N. Y.

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towards physical, mental and moral betterment. One of his patients is a large manufacturer employing many unskilled laborers. Dr. Smith has often pointed out to this man that the efficiency of his working force would be multiplied many times were the men paid better wages, the work done in rooms better lighted and ventilated, and in general with a little more humaneness shown them. Another is at the head of a large mercantile house which employs clerks at the lowest possible wages and makes the conditions of life well nigh unendurable. A wealthy woman gives largely to church and charity from her revenues which come from the rental of houses in the red light district. Another of the doctor's patrons is a grocer who sells "egg substitutes" and similar products "all guaranteed under the pure food law." We will not continue the list of the doctor's patrons and it must not be inferred that all are bad, for this is not true. The majority are honest, conscientious people, as is the case in all communities. Our country has a population of nearly one hundred millions. Millions of these are decent, respectable citizens, not altogether wise, but for the most part well intentioned. Thousands are brutal in their instincts, criminal in their pursuits, and breeders of their kind. We claim to be civilized, but there are those among us who would be stoned to death were they to attempt to live in a tribe of savages. But I must stop these parenthetical excursions and get back to Dr. Smith and his dream. On a certain day in November of the present year he had been unusually busy, even for one whose working hours frequently double the legal limit. During his office hours he had seen several cases which gave him grave concern. There was William Thompson, the son of his old classmate and college chum, now Judge Thompson. William finished at the old

university and is now an embryo lawyer promising to follow in the footsteps of his honored and honorable father, but William belonged to a fast fraternity at college and came to Dr. Smith this morning with copper-colored spots over his body and a local sore. The doctor easily diagnosed the case and pointed out to William that he was a walking culture flask of spirochetes, a constant source of danger to all who should come in contact with him, and that years of treatment would be necessary to render him sound again. On the lip of a girl, the daughter of another old friend, the doctor had found a chancre caused by a kiss from her fiancé, a supposedly upright man prominent in church and social circles. He had seen a case of gonorrhea in a girl baby contracted from her mother, the wife of a laboring man. A case of gonorrheal ophthalmia in a young man whose only sin was that he had used the same towel used by an older brother next demanded his attention. Several cases of advanced tuberculosis among those who had been told by less conscientious physicians that the cough was only a bronchial trouble made Dr. Smith lament the standard of skill and honor among some of his professional brethren. Rapid loss in weight in an old friend who had been too busy to consult him earlier was diagnosed as neglected diabetes. In another instance dimness of vision and frequent headaches persisting for months had not sufficed to send an active business man to the physician. This proved to be an advanced case of Bright's disease, which should have been recognized two years earlier. Urinary, ophthalmoscopic and blood pressure tests demonstrated the seriousness of the present condition. A breast tumor on the wife of an old and respected friend showed extensive involvement of the axillary glands and the operation demanded promised only temporary relief, while

had it been done months before, complete removal of the diseased tissue would have resulted. In making his calls for the day Dr. Smith had experienced both among the well-to-do and the poor many things which had brought within the range of his vision more and darker clouds than those which floated in the dull November sky. More than a year before he had become estranged from the family of one of his oldest and best friends. The breaking of this relationship which had continued from his earliest professional service and had been filled with the common joys and sorrows shared only by the family physician and those under his charge, had cast a deep shadow over the doctor's life. He had officiated at the birth of each of his friend's five children, and he felt a parental love and pride in them as he saw them grow into healthy womanhood and manhood. A little more than a year ago, he learned that the eldest of these children, a beautiful and healthy girl of eighteen, was engaged to a young man whom he knew to be a rake. In a spirit of altruism he had gone to the father and mother and protested against the sacrifice of the daughter. This kindly intended intervention was met with a stormy rebuff, and the doctor was rudely dismissed from his friend's house. But when the young woman whose life with her unfaithful husband had made her deeply regret her fatal infatuation, felt the first pains of childbirth she begged of her parents that her old friend might be sent for, and that morning he had delivered her of a syphilitic child. How unlike the previous births at which he had officiated in this friend's house! It had been the custom to have the doctor at every birthday dinner given the five children, and one of the boys bore his name. There would be no birthdays for this, the first grandchild, and what could the future promise the young mother? Surely,

the November day was overcast with clouds for Dr. Smith before its gray light awoke the slumbering city. As he walked the few short blocks from his friend's to his own home, he cried in deepest sorrow how many thousands of daughters must be sacrificed before their parents will permit them to walk in the light of knowledge and not in the shadow of ignorance. After a breakfast, which was scarcely tasted, he read in the morning paper that the announcement that "Damaged Goods" was to be given in his University town had met with such a storm of protest from the learned members of the faculty that the engagement had been cancelled. "Surely," he said, "the fetters of prudery and custom bind both the learned and the unlearned."

After his morning office hours Dr. Smith visited his patients at the city hospital. Here is a wreck from cocaine intoxication, the poison having been purchased from a drug-store owned by a prominent local politician. In a padded cell is a man with delirium tremens, a patron of a gilded saloon run by another political boss. In the lying-in ward are a dozen girls seduced in as many dance halls with drinking alcoves. Time will relieve these girls of the products of conception, a longer time will be required to free them from the diseases which they have contracted, but all time will not wash away the stains on their lives, and what of the fatherless children to be born? Thirty beds are filled with typhoids, who under the best conditions must spend long weeks in the bondage of a fever, which day by day gradually but inexorably tightens its grasp. The furred tongues, glazed eyes, flushed cheeks, bounding pulses, emaciated frames, delirious brains were all due to the fact that a large manufacturer had run a private sewer into the river above the water works. The greed and ignorance of one business firm had

been permitted to endanger the lives of half a million of people. In his family calls the doctor met with conditions equally lamentable. A fond mother in her ignorance had nursed a sore throat in one of her children with domestic remedies. The membranous patches on the tonsils, extending upward into the nasal passages and downward into the larynx, and the cyanotic face with labored breathing showed that even the magical curative action of diphtheria antitoxin, that wonderful discovery of modern medicine, would be of little avail in this individual case. The other children were treated with immunizing doses and the doctor had the consolation of knowing that death's harvest in that household would be limited to the one whom the mother's ignorance had doomed.

The next call brought Dr. Smith to a home in which the conditions were equally deplorable and still more inexcusable. One of the children some months before had been bitten by a strange cur which soon disappeared in the alley. The wound was only a scratch and was soon forgotten. Now, the child was showing the first symptoms of that horrible disease hydrophobia. But dogs must not be muzzled. Women with plumes, torn from living birds, in their hats, formed a society for the prevention of cruelty to animals, and so declared.

It must not be inferred that all of Dr. Smith's experiences on that November day were sad. Men are mortal; all sickness is not preventable, accidents will happen and distressing injuries result. This world is not an Eden and no one expects that all sorrow will be banished from it. Decay and death approach with advancing years. Strength and weakness are relative terms and those possessed of the former must help bear the burdens of those afflicted with the latter. Dr. Smith being a hard-headed, reasonable, scientific man, is no Utopian,

and he frequently meets in sick rooms experiences which greatly increase both his interest and his confidence in man. He finds the young and vigorous denying themselves many pleasures in order to brighten the pathways of the old and infirm, the fortunate lending a helping hand to the unfortunate, and the wise leading the unwise. No one, more than the family physician, can measure and appreciate the innate goodness that springs without an effort from the heart of humanity. It is difficult for the physician of large experience to unreservedly condemn any one, and he is inclined to regard all sins as due to either heredity or environment. However, it must be admitted that on this day Dr. Smith had seen but little sunshine and the clouds that had gathered about him had hidden the virtues and magnified the vices of his community, and especially was this true of the vice of ignorance, for ignorance which results in injury to one's fellows is not only a vice but a crime, a moral, if not a statutory one.

Late that night as the doctor sat before his grate he fell asleep, and now he is busy among his patients in a way hitherto quite unknown to him. His waiting-room is filled with people, old and young, of both sexes, who have come to be examined in order to ascertain the exact condition of their health. A young man before proposing marriage to the woman of his choice wishes a thorough examination. He wishes to know that in offering himself he is not bringing to the woman any harm. He desires to become the father of healthy children and he is not willing to transmit any serious defect to them. He tells the doctor to examine him as carefully as he would were he applying for a large life insurance. The doctor goes through the most thorough physical examination and tests the secretions and blood with the utmost care. He

understands his own responsibility in the matter and appreciates the high sense of honor displayed by his patient. A young woman for like reasons has delayed her final answer to the man who has asked her hand in order that the doctor might pass upon her case. Here is the doctor's old friend, William Stone. Mr. Stone is in the early fifties. He has been a highly successful, honorable business man, has accumulated a sufficiency and enjoys the good things which his wife prepares for the table. A careful examination of the urine leads the doctor to caution Mr. Stone to reduce the carbohydrates in his food. Mr. Perkins, a lawyer who throws his whole strength in every case he tries, and of late has found himself easily irritated, shows increased urinary secretion and a blood pressure rather high. A vacation with light exercise and more rest is the preventive prescription which he receives. Mrs. Williams, after being examined by Dr. Smith, undergoes a slight operation under local anesthesia, and is relieved of the first and only malignant cells found in her breast. Richard Roe, who is preparing for a long journey, is vaccinated against typhoid fever, a disease no longer existent in Dr. Smith's city since pollution of the water has been discontinued. John Doe, who is a mineralogical expert and wishes to do some prospecting in high altitudes, has his heart examined. There are numerous applicants for pulmonary examination. This is done by Dr. Smith and his assistants in a most thorough and up-to-date manner, and advice is given each according to the findings. It has been many years since Dr. Smith has seen an advanced case of pulmonary tuberculosis and the great white plague will soon be a thing of the past. Every body goes to a physician twice a year and undergoes a thorough examination. The result of this examination is stated in

a permanent record and no two consecutive examinations are made by the same physician, in order that a condition overlooked by one may be detected by another. Cases of doubt or in which there is difference of opinion are referred to special boards. The average of human life has been greatly increased and the sum of human suffering has been greatly decreased. Preventive has largely replaced curative medicine. Tenements are no longer known; prostitution and, with it, the venereal diseases have disappeared; institutions for the feeble-minded are no longer needed, because the breed has died out; insanity is rapidly decreasing because its chief progenitors, alcoholism and syphilis, have been suppressed. These and many other pleasing visions come to Dr. Smith in his dream, from which he is startled by the ring of the telephone at his elbow. The call says: "Come quickly to Pat Ryan's saloon at the corner of Myrtle and Second. There has been a drunken row. Bring your surgical instruments." Then the smiles which had played over the face of the doctor in his dream were displaced by lines of care and he went forth into the darkness of ignorance and crime.

There are many Dr. Smiths and they have been seeing pleasing visions in their dreams and meeting with stern realities in their waking hours. Nearly fifty thousand Dr. Smiths constitute the American Medical Association which is expending thousands of dollars annually in trying to so educate the people that unnecessary disease will be prevented. The doctors are asking that the work of the national, state, municipal and rural health organizations may be made more effective, that the knowledge gained in the study of the causation of disease may be utilized. The world has seen what has been done in Havana and on the Canal Zone, how yellow fever and malaria

have been suppressed, and how the most pestilential spots on earth may be converted into healthful habitations for man. Scientific medicine has made these demonstrations and the world applauds, but seems slow to make general application of the rules of hygiene.

Dr. Foster had experienced the doctor's dream when he said to you in 1909:

I look forward with confidence to the time when preventable diseases will be prevented, and when curable diseases will be recognized in the curable stage and will be cured, and I believe the grandest triumphs of civilization will be the achievements which will result from a realization of the possibilities of preventive medicine.

Professor Fischer, a most earnest and intelligent student of the prevention of sickness and the deferring of death has stated that "by the intelligent application of our present knowledge, the average span of human life may be increased full fifteen years."

It has been proposed that the life insurance companies represented here seek to prolong the lives of their policyholders by offering them free medical reexamination at stated intervals. It has been shown that in all probability this would financially benefit the companies in the increased longevity of their policyholders and the increased number of premiums they would pay. This is a business proposition, and I hope that the companies will inaugurate it and thus demonstrate that the lessening of sickness and the deferring of death will pay. Let the insurance men join the doctors and help in the great work for the uplift of the race through the eradication of unnecessary disease and premature death. In this way we can hasten the coming of the better man by making the doctor's dream a reality. I am confident that you will do this, not because it will

pay, but because it is the highest service you can render humanity.

VICTOR C. VAUGHAN

UNIVERSITY OF MICHIGAN

*THE AMERICAN ASSOCIATION FOR THE
ADVANCEMENT OF SCIENCE
SCIENCE, EDUCATION AND DEMOCRACY¹*

SCIENCE, education and democracy—the three great enterprises of the modern world—are in no institution more completely represented than in this American Association for the Advancement of Science and in its section of education. We are organized to advance science in all its range from the most esoteric deduction of the mathematician to the most homely contrivance of the inventor, and at the same time to diffuse scientific knowledge and scientific method among all who are willing to listen. Our membership includes the ablest scientific leaders and equally those who in Bishop Berkeley's phrase are "undebauched by learning." We migrate from place to place for our meetings in order that we may teach and learn in all parts of the country. We form more nearly a democracy of science than any other organization. Education is amalgamated with every section of our association, which is as completely an educational institution as is a university. And as the university, devoted throughout to education, yet may include a department or school of education, so we have conducted in recent years a section of education. This section is concerned with the place of the sciences in our educational system and with improving the methods of teaching them. It has also as its object, perhaps its principal object, the development of a science of education; for there is no other applied science—not agri-

¹ Address of the vice-president and chairman of the Section of Education of the American Association for the Advancement of Science, read at Atlanta, Ga., on December 31, 1913.